

SHORT PERIOD VARIABLES IDENTIFIED BY THE RAPID TEMPORAL SURVEY

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In the summer of 2011 we initiated the RATS-Kepler survey to identify targets in the Kepler field which showed a photometric variation in their optical flux on a timescale shorter than one hour, with a particular emphasis on the shorter period end of this range. We have identified several thousand variable objects in our data and have selected two dozen targets which we bid for Short Cadence observations using Kepler. These sources fit into a few different variability classes: pulsating white dwarfs, α Cen and δ Scuti stars, SX Phe stars, flare stars and eclipsing binaries. With each class we are sampling from a new parameter space. We include in our sample only the second variable hydrogen white dwarf found in the Kepler field, the first hot pulsating pre-white dwarf, a sample of high amplitude δ Scuti type pulsators, the first selection of SX Phe variables to be observed by Kepler and the shortest known period eclipsing binary stars. We will use these observations in order to perform asteroseismic analysis of the pulsating stars and to measure changes in the orbital period of the the eclipsing binaries.